Abstract of the Disclosure

ROTOR THERMAL MODEL FOR USE IN MOTOR PROTECTION

The protective relay for an induction motor includes a first program function which establishes a first thermal threshold value for a start condition of the motor, using a start condition thermal model. The thermal condition of the motor is determined by means of a thermal model representation in response to current provided to the motor. A comparing element then compares the start condition thermal representation with the first thermal threshold value and produces an output signal when the first thermal threshold value is exceeded by the start condition thermal representation. A second thermal threshold value is established for a run condition of the motor, the second threshold value being different from the first threshold value and including a selected time constant which results in the time-current curves of the start and run conditions being substantially continuous. A representation of the thermal condition of the motor is then developed in response to the current to the motor, and a comparison is accomplished relative to the run condition thermal representation with the second thermal threshold value. An output signal is produced when the second thermal threshold is exceeded by the run condition thermal representation.